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18 HAMAMATSU CORPORATION,

HAMAMATSU PHOTONICS K.K., and

19 PHOTONICS MANAGEMENT CORP.

20 **UNITED STATES DISTRICT COURT**
21 **NORTHERN DISTRICT OF CALIFORNIA**

22 SEMICAPS PTE LTD.,

23 Plaintiff,

24 vs.

25 HAMAMATSU CORPORATION, et al.,

26 Defendants.

CASE NO. 17-cv-03440-DMR

DEFENDANTS' MOTION TO DISMISS
UNDER RULE 12(b)(6)

Date: June 27, 2019

Time: 11:00 a.m.

Courtroom: 4

Judge: Honorable Donna M. Ryu

1 **NOTICE OF MOTION AND MOTION**

2 TO PLAINTIFF AND ITS ATTORNEYS OF RECORD:

3 NOTICE IS HEREBY GIVEN that on June 27, 2019, at 11:00 a.m., or such other time as
4 ordered by the Court, located at 1301 Clay Street, Oakland, CA 94612, Defendants Hamamatsu
5 Corporation, Hamamatsu Photonics K.K., and Photonics Management Corp. (collectively,
6 “Hamamatsu”) will respectfully move the Court to dismiss the complaint filed in this case by
7 Plaintiff SEMICAPS Pte Ltd. (“SEMICAPS”) pursuant to Federal Rule of Civil Procedure
8 12(b)(6).

9 The complaint should be dismissed with prejudice because the asserted claims of U.S.
10 Patent No. 7,623,982 (the “‘982 patent”) are invalid under 35 U.S.C. § 101 for claiming patent-
11 ineligible subject matter. Specifically, the claims are drawn to the patent-ineligible abstract idea
12 of collecting multiple data samples and using the data to generate a test result, and the claims do
13 not contain an inventive concept beyond this abstract idea. Hamamatsu’s Motion will be based on
14 this Notice, the Memorandum of Points and Authorities set forth immediately below, and any
15 information of which the Court may take judicial notice.

16 **STATEMENT OF ISSUES TO BE DECIDED**

17 Whether SEMICAPS’s complaint fails to state a claim upon which relief can be granted
18 because the asserted claims of ‘982 patent are invalid under 35 U.S.C. § 101 for claiming patent-
19 ineligible subject matter.

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MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION

Section 101 of the Patent Act defines specific categories of subject matter eligible for patent protection. It provides: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. The Supreme Court has “long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014). “Laws of nature, natural phenomena, and abstract ideas are the basic tools of scientific and technological work,” and “monopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it, thereby thwarting the primary object of the patent laws.” *Id.* (internal quotations and formatting omitted).

The *Alice* decision endorsed a two-step framework to determine whether a patent claim falls outside of § 101. *See Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). The first step considers whether the “focus” or “character” of the claim is directed to one of the patent-ineligible exceptions, such as an abstract idea. *Id.* If so, the second step considers whether the claim recites elements that, alone or in combination, provide an “inventive concept” that transforms the abstract idea into a patent-eligible application. *Id.*

Applying this framework, the Federal Circuit has repeatedly held that patent claims directed to collecting and processing data are abstract ideas that fall outside of § 101, and that implementing the abstract idea in a specific technological environment or with conventional hardware does not transform the idea into a patent-eligible application. In *Electric Power*, the Federal Circuit held that claims directed to collecting data from a power grid, analyzing the data to generate performance metrics, and displaying the performance metrics were invalid under § 101. *Id.* at 1353-55. The Federal Circuit reached the same conclusion in *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607 (Fed. Cir. 2016) for patent claims directed to acquiring and processing image data using an embedded camera in a mobile telephone. And in *FairWarning IP, LLC v.*

1 *Iatric Sys., Inc.*, 839 F.3d 1089 (Fed. Cir. 2016), the Federal Circuit invalidated claims directed to
 2 collecting data about access to health records and analyzing the data to detect improper accesses.

3 The patent claims at issue in this case are directed to the same type of patent-ineligible
 4 subject matter. They describe the abstract idea of “determining” and “accumulating” a plurality of
 5 data samples from an electronic circuit, and processing the data samples to “generate a value” and
 6 a “test result.” The claims do not recite any elements that, alone or in combination, transform this
 7 abstract idea into a patent-eligible application. They simply implement the abstract idea in the
 8 known technological environment of testing electronic circuits, using conventional hardware like a
 9 laser, control system, measuring circuit, and signal processor. Under the two-step framework in
 10 *Alice*, the claims are invalid because they fall outside of § 101, and SEMICAPS’s complaint
 11 should be dismissed with prejudice for failure to state a claim on which relief can be granted.

12 **II. FACTUAL BACKGROUND**

13 **A. The Specification of the ‘982 Patent Identifies the Alleged Invention as** 14 **Determining and Accumulating a Plurality of Data Samples and Using Them** **to Generate a Test Result**

15 The ‘982 patent is titled “Method of Testing an Electronic Circuit and Apparatus Thereof.”
 16 Dkt. No. 1-1 (the ‘982 patent). The patent is in the field of testing electronic circuits to determine
 17 the location of a defect or fault. *Id.* at 1:6-8. The patent focuses on a class of techniques known as
 18 “laser-induced” testing, which involves focusing a laser beam on a specific location of an
 19 electronic circuit and measuring the change in current or voltage supplied to the circuit. *Id.* at
 20 1:11-26. A significant change may indicate the presence of a defect at the location where the laser
 21 beam is focused. *Id.* The ‘982 patent admits that laser-induced testing techniques were well
 22 known in the prior art, and identifies several example techniques including Optical Beam Induced
 23 Resistance Change (“OBIRCH”), Thermal Induced Voltage Alteration (“TIVA”), Thermal Beam
 24 Induced Phenomenon (“TBIP”), Externally Induced Voltage Alteration (“XIVA”) and Differential
 25 Resistance Measurement (“DReM”). *Id.*

26 The alleged invention of the ‘982 patent is not a new or novel laser-induced testing
 27 technique; rather, the patent is directed to improving the “detection sensitivity” of conventional
 28 techniques that were already known in the prior art. *Id.* at 1:34-37 (“[I]n order for these

1 conventional laser induced techniques to remain effective . . . an improvement in their detection
 2 sensitivity is needed.”). The patent explains that improved detection sensitivity was necessary
 3 because electronic circuits at the time were designed with more metallization layers and low-
 4 conductivity dielectric materials. *Id.* at 1:28-33 (“[W]ith the advancement of integrated circuit
 5 technology which has typically involved the use of more metallization layers and new low k inter-
 6 layer dielectric materials with lower thermal conductivity, the laser coupling efficiency is reduced.
 7 As a result, the detection sensitivity of these conventional laser induced techniques is also
 8 reduced.”). The patent then characterizes prior attempts to improve detection sensitivity as
 9 ineffective. *Id.* at 1:38-67. These prior attempts focused on hardware modifications, such as
 10 increasing the laser intensity or using the laser in combination with a lock-in amplifier. *Id.*
 11 According to the patent, however, these modifications were undesirable because they risked
 12 damaging the test circuit and required finely tuned calibration of the lock-in amplifier, which is
 13 “difficult to achieve in practice” and thus “not used in a real-time integrated circuit testing
 14 environment.” *Id.*

15 Rather than proposing a new hardware modification, the ‘982 patent aims to improve
 16 detection sensitivity simply by collecting more data from the circuit being tested. *Id.* at 2:3-10.
 17 The patent describes the invention as “determining a *plurality of samples* of a response signal
 18 output by the electronic circuit,” “accumulating the *plurality of samples* to generate a value,” and
 19 “generating a *test result* based on the value.” *Id.* (emphasis added). The patent also describes
 20 generic hardware components used to implement these method steps—including a laser beam
 21 source, control system, measuring circuit, and signal processor—but the patent does not propose
 22 any modifications or improvements to these generic hardware components. *Id.* at 2:11-22. In fact,
 23 the patent admits that the components were conventional features of laser-induced testing systems
 24 known in the prior art, and cites U.S. Patent No. 6,897,664 as an example prior-art system that
 25 includes each of the components. *Id.* at 1:12-15, 3:36-48; Ex. 2 (U.S. Patent No. 6,897,664) at
 26 3:5-23, Fig. 1.¹ The only distinction the ‘982 patent makes over these prior-art systems is the

27
 28 ¹ Exhibit numbers refer to the Declaration of K. Kevin Chu submitted with this motion.

1 concept of collecting a plurality of data samples and using them to generate a test result. Dkt. No.
2 1-1 at 2:11-22.

3 **B. The Asserted Claims of the ‘982 Patent Are Directed to the Abstract Idea of**
4 **Determining and Accumulating a Plurality of Data Samples and Using Them**
5 **to Generate a Test Result**

6 SEMICAPS’s complaint alleges that Hamamatsu infringes claims 4-7 and 21-25 of the
7 ‘982 patent. Dkt. No. 1, ¶ 13. Claims 4-7 depend from independent claim 1, which recites a
8 method for testing an electronic circuit that includes the steps of “determining a plurality of
9 samples of a response signal,” “accumulating the plurality of samples to generate a value,” and
10 “generating a test result based on the value.” Dkt. No. 1-1 at 10:59-67, 11:8-18. Claim 1 is
11 reproduced below:

- 12 1. A method of testing an electronic circuit, comprising:
- 13 radiating a laser beam onto the electronic circuit,
- 14 determining a plurality of samples of a response signal output by the
- 15 electronic circuit during the period when the laser beam is radiated,
- 16 accumulating the plurality of samples to generate a value, and
- 17 generating a test result based on the value.

18 *Id.* at 10:59-67.

19 Claim 4 depends from claim 1 and specifies that the laser beam is a pulsed laser beam. *Id.*
20 at 11:8-9. Claims 5-7 depend from claim 4 and describe frequencies for pulsing the laser beam
21 and accumulating the data samples. *Id.* at 11:10-18.

22 Independent claim 21 is directed to an apparatus that includes hardware components to
23 perform the same steps as claim 1, *i.e.*, “determin[ing] a plurality of samples of a response signal,”
24 “accumulat[ing] the plurality of samples to generate a value,” and “generat[ing] a test result based
25 on the value.” Dkt. 1-1 at 12:19-31. Claim 21 is reproduced below:

- 26 21. An apparatus, comprising:
- 27 a laser beam source, wherein the laser beam source radiates a laser beam
- 28 onto the electronic circuit,
- a control system operable to direct the laser beam source to dwell on a
- location on the electronic circuit,

1 a measuring circuit, wherein the measuring circuit determines a plurality
2 of samples of a response signal output by the electronic circuit during the
period when the laser beam is radiated, and

3 a signal processor, wherein the signal processor accumulates the plurality
4 of samples to generate a value, and generates a test result based on the
value.

5 *Id.* at 12:19-31.

6 Claims 22-25 depend from claim 21. *Id.* at 12:32-43. Claim 22 explains that the control
7 system is operable to move the laser in a pattern over the electronic circuit. *Id.* Claim 23, like
8 claim 4, specifies that the laser beam source is a pulsed laser beam. *Id.* And claims 24 and 25,
9 like claims 5-7, describe frequencies for radiating the laser beam and accumulating the data
10 samples. *Id.*

11 **C. The Prosecution History of the ‘982 Patent Shows that the Only Distinction**
12 **Between the Claims and the Prior Art Is the Abstract Idea of Determining and**
Accumulating a Plurality of Data Samples

13 During prosecution of the application underlying the ‘982 patent, the inventors relied
14 solely on the concept of determining and accumulating a plurality of data samples in order to
15 distinguish their alleged invention from the prior art. The application underlying the ‘982 patent
16 was filed on November 5, 2007. Dkt. No. 1-1. On February 19, 2009, the examiner issued an
17 Office Action finding claims 1-25 invalid as anticipated by U.S. Patent No. 7,019,311 to Horn.
18 *See* Ex. 1 at 60-68. The inventors responded to the Office Action on May 19, 2009, and argued
19 that the Horn reference did not anticipate the pending claims because it disclosed accumulating
20 only a single data sample, not a plurality of samples:

21 Horn fails to provide any basis for a feature of “determining a plurality of samples
22 of a response signal output,” or a feature of “accumulating the plurality of
samples to generate a value,” as required by applicants’ claim 1. Contrariwise,
23 Horn teaches to process one charge collection signal for each spatial locations . . .
24 . Based on the foregoing, claim 1 is differentiated from, and thus not anticipated
by, Horn.

25 *Id.* at 88 (emphasis in original).

26 The inventors repeated the same arguments with respect to apparatus claims 21-25. *Id.* at
27 89-90. Notably, they did *not* argue that the computer and hardware components of these claims
28 distinguished them from the prior art:

1 Consistent with the remarks in the preceding sub-section hereof, Horn fails to
 2 provide any basis for circuitry or any other components that “determines a
 3 plurality of samples of a response signal output,” or a signal processor that
 accumulates the plurality of samples of the same response signal to generate a
 value, as required by applicants’ claim 21.

4 *Id.* at 89 (emphasis in original).

5 In light of the inventors’ arguments regarding the Horn reference, the examiner withdrew
 6 his rejections and allowed the pending claims. *Id.* at 109-15. In his Notice of Allowance, the
 7 examiner agreed with the applicants that the concept of determining and accumulating a plurality
 8 of data samples distinguished the claims over the prior art:

9 The main reason for the allowance of claims 1 and 21 is the inclusion of the
 10 limitation “...determining a plurality of samples of a response signal output by
 the electronic circuit during the period when the laser beam is radiated,
 11 accumulating the plurality of samples to generate a value, and generating a test
 result based on the value,” claim 21 is an apparatus claim and has similar
 12 limitation.

13 *Id.* at 113-14 (emphasis and ellipsis in original).

14 **III. LEGAL STANDARDS**

15 **A. Motions to Dismiss Under Federal Rule of Civil Procedure 12(b)(6)**

16 Under Federal Rule of Civil Procedure 12(b)(6), a district court must dismiss a complaint
 17 if it fails to state a claim upon which relief can be granted. To survive a Rule 12(b)(6) motion, the
 18 plaintiff must allege “enough facts to state a claim to relief that is plausible on its face.” *Bell Atl.*
 19 *Corp. v. Twombly*, 550 U.S. 544, 570 (2007). In determining whether the plaintiff has stated a
 20 claim upon which relief can be granted, the plaintiff’s factual allegations are accepted as true. *See*
 21 *Usher v. City of Los Angeles*, 828 F.2d 556, 561 (9th Cir. 1987). However, the Court is not
 22 required to accept as true “allegations that are merely conclusory, unwarranted deductions of fact,
 23 or unreasonable inferences.” *In re Gilead Scis. Sec. Litig.*, 536 F.3d 1049, 1055 (9th Cir. 2008).

24 The Federal Circuit has “repeatedly recognized that in many cases it is possible and proper
 25 to determine patent eligibility under 35 U.S.C. § 101 on a Rule 12(b)(6) motion.” *Genetic Techs.*
 26 *Ltd. v. Meril L.L.C.*, 818 F.3d 1369, 1373 (Fed. Cir. 2016); *see also Cleveland Clinic Found. v.*
 27 *True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017) (“[W]e have repeatedly
 28 affirmed § 101 rejections at the motion to dismiss stage, before claim construction or significant

discovery has commenced.”). This is because patent eligibility under § 101 is a question of law, and resolution is appropriate where, as in this case, there are no factual allegations in the complaint that create a contested underlying issue of fact. *See Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018); *SAP Amer., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1166 (Fed. Cir. 2018). In that situation, the issue may be decided on undisputed facts from the claims, specification, and prosecution history. *See id.*² Consistent with this precedent, courts in the Northern District of California have routinely granted motions to dismiss on the grounds that the asserted patents are invalid under § 101. *See, e.g., Cisco Sys., Inc. v. Uniloc USA, Inc.*, No. 18-cv-04991-SI, 2019 WL 1995334, at *12 (N.D. Cal. May 6, 2019); *RingCentral, Inc. v. Dialpad, Inc.*, No. 18-cv-05242-JST, 2019 WL 1102986, at *2 (N.D. Cal. Mar. 8, 2019); *TS Patents LLC v. Yahoo! Inc.*, 279 F. Supp. 3d 968, 1001 (N.D. Cal. 2017), *aff’d*, 731 F. App’x 978 (Fed. Cir. 2018); *PUREPREDICTIVE, Inc. v. H2O.AI, Inc.*, No. 17-cv-03049-WHO, 2017 WL 3721480, at *7 (N.D. Cal. Aug. 29, 2017), *aff’d*, 741 F. App’x 802 (Fed. Cir. 2018); *OpenTV, Inc. v. Apple Inc.*, No. 5:15-cv-02008-EJD, 2016 WL 344845, at *10 (N.D. Cal. Jan. 28, 2016).

B. Patent Eligible Subject Matter Under 35 U.S.C. § 101

Section 101 defines patent eligible subject matter as “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101. The Supreme Court has “long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice*, 573 U.S. at 216. “Laws of nature, natural phenomena, and abstract ideas are the basic tools

² The Court may take judicial notice of the prosecution history and other matters of public record in evaluating a motion to dismiss, such as the ‘664 patent discussed in Section II.A above. *See MGIC Indem. Corp. v. Weisman*, 803 F.2d 500, 504 (9th Cir. 1986) (“On a motion to dismiss, we may take judicial notice of matters of public record outside the pleadings.”); *see also CODA Dev. S.R.O. v. Goodyear Tire & Rubber Co.*, 916 F.3d 1350, 1360 (Fed. Cir. 2019) (explaining that a court may take judicial notice of facts outside of the pleadings on a 12(b)(6) motion to dismiss, provided the facts are not subject to “reasonable dispute”); *Aatrix*, 882 F.3d at 1128 (discussing “sources properly considered on a motion to dismiss, such as the complaint, the patent, and materials subject to judicial notice”).

1 of scientific and technological work,” and “monopolization of those tools through the grant of a
2 patent might tend to impede innovation more than it would tend to promote it, thereby thwarting
3 the primary object of the patent laws.” *Id.* (internal quotations and formatting omitted). “The
4 Supreme Court, setting up a two-stage framework, has held that a claim falls outside § 101 where
5 (1) it is directed to a patent-ineligible concept, *i.e.*, a law of nature, natural phenomenon, or
6 abstract idea, and (2), if so, the particular elements of the claim, considered both individually and
7 as an ordered combination, do not add enough to transform the nature of the claim into a patent-
8 eligible application.” *Electric Power*, 830 F.3d at 1353 (internal quotations omitted) (citing *Alice*,
9 573 U.S. at 216).

10 The first step of the *Alice* framework considers the “focus” of the claims and their
11 “character as a whole” to determine whether they are directed to an abstract idea, law of nature, or
12 natural phenomena. *Electric Power*, 830 F.3d at 1353. If they are, then the second step is to
13 “search for an inventive concept—*i.e.*, an element or combination of elements that is sufficient to
14 ensure that the patent in practice amounts to significantly more than a patent upon the ineligible
15 concept itself.” *Alice*, 573 U.S. at 217-18 (internal formatting omitted). The inventive concept
16 must be more than “well-understood, routine, conventional activity.” *Mayo Collaborative Servs.*
17 *v. Prometheus Labs., Inc.*, 566 U.S. 66, 132 (2012). It cannot simply amount to implementing the
18 abstract idea in a known technological environment. *See Electric Power*, 830 F.3d at 1354-55
19 (“Most obviously, limiting the claims to the particular technological environment of power-grid
20 monitoring is, without more, insufficient to transform them into patent-eligible applications of the
21 abstract idea at their core.”). Nor can it amount to implementing the abstract idea using
22 conventional hardware. *See TLI*, 823 F.3d at 613 (“We agree with the district court that the
23 claims’ recitation of a ‘telephone unit,’ a ‘server,’ an ‘image analysis unit,’ and a ‘control unit’ fail
24 to add an inventive concept sufficient to bring the abstract idea into the realm of patentability.”).

25 Following *Alice*, the Federal Circuit has invalidated numerous patents directed to the
26 abstract idea of collecting and processing data. *See, e.g., Electric Power*, 830 F.3d at 1353-55
27 (claims directed to collecting data from a power grid, analyzing the data to generate performance
28 metrics, and displaying the performance metrics); *TLI*, 823 F.3d at 611-12 (claims directed to

acquiring and processing image data using an embedded camera in a mobile telephone); *FairWarning IP*, 839 F.3d at 1093-96 (claims directed to collecting data about access to health records and analyzing the data to detect improper accesses); *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1337 (Fed. Cir. 2017) (claims directed to converting, routing, controlling, monitoring, and accumulating records); *Content Extraction and Transmission LLC v. Wells Fargo Bank, Nat. Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (claims directed to collecting data, recognizing certain data within the collected set, and storing that data); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1371-72 (Fed. Cir. 2017) (claims directed to acquiring identification data from a bankcard, using the data to verify if the bankcard is valid, and denying access if the bankcard is invalid). The asserted claims of the '982 patent—which were submitted to the Patent Office before the *Alice* decision—are directed to the same type of abstract idea.

IV. ARGUMENT

The asserted claims of the '982 patent are directed to the abstract idea of accumulating a plurality of data samples and using them to generate a test result. The claims do not recite any inventive concept that transforms this abstract idea into a patent-eligible application; they simply implement the idea in a known technological environment using conventional hardware. Under the two-step *Alice* framework, the claims fall outside of § 101 and are invalid.

A. *Alice* Step 1: The Asserted Claims of the '982 Patent Are Directed to the Abstract Idea of Accumulating Data and Processing it to Generate a Test Result

1. The Focus and Character of the Claims Is an Abstract Idea

The first step of the *Alice* framework considers the “focus” of the claims or their “character as a whole.” *Electric Power*, 830 F.3d at 1353. The focus and character of the '982 patent claims is collecting data and processing it to generate a test result. Claim 1 recites a “method for testing an electronic circuit.” Dkt. No. 1-1 at 10:60-67. The method includes the step of radiating the circuit with a laser beam as an input and then “determining a plurality of data samples of a response signal” as an output. *Id.* The remaining steps require “accumulating the plurality of data samples to generate a value” and “generating a test result based on the value.” *Id.* Taken together,

1 these steps describe collecting data from the circuit being testing and processing the data to arrive
2 at a test result. *Id.* Claims 4-7, which depend from claim 1, specify frequencies for pulsing the
3 laser beam and sampling the response signal. *Id.* at 11:8-18. These limitations describe the input
4 and output of the claimed method, but they do not change its focus or overall character of
5 collecting and processing data to generate a test result. *Id.* at 11:8-18.

6 The Federal Circuit has held that claims directed to collecting data and processing it to
7 generate a result are abstract ideas under *Alice* step one. *Electric Power*, 830 F.3d at 1353-54. In
8 *Electric Power*, the claims recited a method of detecting events on an interconnected electric
9 power grid. *Id.* at 1351-52. The method included the steps of, *inter alia*, receiving input data that
10 includes measurements from multiple points in the power grid, detecting and analyzing the
11 measurements to derive various metrics about the power grid, and using metrics to derive an
12 “indicator” that represents the power grid’s vulnerability. *Id.* Analyzing the claims, the Federal
13 Circuit explained that the “focus” was “collecting information, analyzing it, and displaying certain
14 results of the collection and analysis.” *Id.* at 1353.

15 The Federal Circuit then walked through its precedent under § 101 to explain why these
16 concepts amount to nothing more than an abstract idea. *Id.* at 1353-54. First, it explained that
17 “we have treated collecting information, including when limited to particular content (which does
18 not change its character as information), as within the realm of abstract ideas.” *Id.* at 1353.
19 Second, it explained that “we have treated analyzing information by steps people go through in
20 their minds, or by mathematical algorithms, without more, as essentially mental processes within
21 the abstract-idea category.” *Id.* at 1354. Third, it explained that “we have recognized that merely
22 presenting the results of abstract processes of collecting and analyzing information, without more
23 (such as identifying a particular tool for presentation), is abstract as an ancillary part of such
24 collection and analysis.” *Id.* It then concluded that “the claims are clearly focused on the
25 combination of those abstract-idea processes. The advance they purport to make is a process of
26 gathering and analyzing information of a specified content, then displaying the results, and not any
27 particular assertedly inventive technology for performing those functions. They are therefore
28 directed to an abstract idea.” *Id.*

1 The same rationale applies to the claims of the ‘982 patent. Just like the claims in *Electric*
 2 *Power* were directed to receiving information in the form of “measurements,” the claims of ‘982
 3 patent are directed to collecting data in the form of “samples.” Like the claims in *Electric Power*
 4 were directed to analyzing the measurements to derive “metrics,” the claims of the ‘982 patent are
 5 directed to accumulating the samples to derive a “value.” And like the claims in *Electric Power*
 6 were directed to using the metrics to derive an “indicator,” the claims of the ‘982 patent are
 7 directed to using the value to generating a “test result.” The focus and character of the ‘982 patent
 8 claims, therefore, is collecting and processing information to generate a test result, which is
 9 nothing more than an abstract idea under *Alice* step one. *Electric Power*, 830 F.3d at 1354.

10 The recitation of hardware and computer components in asserted claim 21 does not change
 11 this result. As discussed in Section II.B above, claim 21 describes an apparatus that includes a
 12 “laser beam source,” “control system,” “measuring circuit,” and “signal processor.” Dkt. No. 1-1
 13 at 12:19-31. The ‘982 patent admits that these components were well known in the prior art and
 14 standard features of conventional laser-induced testing systems. *Id.* at 1:12-15, 3:36-48. In
 15 particular, the patent explains that conventional techniques used a scanning microscope that had a
 16 built in laser beam source and control system, along with a lock-in amplifier that acted as a signal
 17 processor. *Id.* at 1:38-67. The patent also discusses U.S. Patent No. 6,897,664, which was filed
 18 five years before the ‘982 patent and describes a prior-art laser-induced testing system with the
 19 same standard components: a pulsed laser beam, control system, measuring circuit, and signal
 20 processor. *Id.* at 3:36-48; Ex. 2 at 3:5-23, Fig. 1.

21 In the context of claim 21, these same standard components are used in a conventional
 22 manner and serve only to implement the abstract idea of collecting data, processing that data, and
 23 generating a test result. Dkt. No. 1-1 at 12:19-31. The laser beam source radiates the circuit; the
 24 control system moves the laser; the measuring circuit “determines a plurality of samples of a
 25 response signal;” and the signal processor “accumulates the plurality of samples to generate a
 26 value” and “generate a test result.” *Id.* Thus, the components are used “merely [as] a conduit for
 27 the abstract idea,” which does not change the focus or overall character of the claims. *See TLI*,
 28 823 F.3d at 612.

1 The *TLI* case is instructive in this regard. There, the claims were directed to recording
 2 image data using a “digital pickup unit” (*i.e.*, a camera) in a mobile phone, transmitting the data to
 3 a server, and storing it on the server. *Id.* at 610. The Federal Circuit explained that the digital
 4 pickup unit, mobile phone, and server “merely provide a generic environment in which to carry
 5 out the abstract idea of classifying and storing digital images in an organized manner.” *Id.* at 611.
 6 They did not change the overall focus or character of the claims. *Id.* at 611-12. The same
 7 rationale applies to claim 21 of the ‘982 patent. The recited hardware and computer components
 8 serve only as a conduit or generic environment for the abstract idea of accumulating data and
 9 using it to generate a test result. Dkt. No. 1-1 at 12:19-31. The focus of the claim is still directed
 10 to this abstract idea. *Id.*

11 Finally, the additional limitations of claims 22-25 do not change the focus or overall
 12 character of the apparatus of claim 21. Claims 22-25 depend from claim 21 and therefore
 13 incorporate its limitations. Claim 22 explains that the control system of claim 21 “is operable to
 14 move the laser beam source according to a pattern over a plurality of locations on the electronic
 15 circuit.” *Id.* at 12:32-34. This functionality simply allows the apparatus to collect and process
 16 data from different locations on the circuit. *Id.* It does not alter the fundamental character of the
 17 claims as focused on collecting and processing that data. Claims 23-25, like claims 4-7 discussed
 18 above, specify frequencies for pulsing the laser beam and sampling the response signal. *Id.* at
 19 12:35-43. These limitations add detail about the input and output of the claimed apparatus, but
 20 they do not change its focus or overall character of collecting and processing data. *Id.*³

21 **2. The Claims Do Not Describe Any Improvement to the Operation of a** 22 **Computer or Other Hardware**

23 This case is distinct from *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016),

24 ³ SEMICAPS recently asserted claims 8 and 17 in its Patent Local Rule 3-1 Disclosure.
 25 These claims were not asserted in the complaint, and therefore they are not part of the pleadings.
 26 See Dkt. No. 1, ¶ 13. Even if SEMICAPS had properly pled infringement of claims 8 and 17, they
 27 would still be subject to dismissal under § 101. Claim 8 depends from claim 1 and simply
 28 describes the timing of accumulating data samples relative to radiating the laser beam. Dkt. No. 1-
 1 at 11:19-22. Claim 17 also depends from claim 1 and simply describes accumulating another
 plurality of data samples and using them to generate another test result. *Id.* at 12:4-9. Neither
 claim changes the focus or overall character of collecting and processing data.

1 in which the Federal Circuit held that the asserted claims were directed to a specific improvement
2 in computer technology, rather than to the mere use of a computer to implement an abstract idea.
3 The *Enfish* claims described a novel self-referential database that allowed computers to store and
4 retrieve data in a more flexible fashion than prior art relational databases. *Enfish*, 822 F.3d at
5 1330-33. The Federal Circuit held that, because the claimed database improved how the computer
6 operated and executed its intended functionality, it was not an abstract idea under *Alice* step one.
7 *Id.* at 1336.

8 Following *Enfish*, the Federal Circuit has distinguished claims directed to an improvement
9 in computer or hardware technology from those that simply use a computer or hardware to
10 implement an abstract idea. *See, e.g., TLI*, 823 F.3d 612. In *TLI*, for example, the Federal Circuit
11 distinguished *Enfish* and explained that the claimed invention had nothing to do with improving
12 the operation of a camera and mobile phone, or optimizing the structure of a server to store image
13 data. *TLI*, 823 F.3d at 612. The claims simply used these components to implement the abstract
14 idea of recording, classifying, and storing image data, which was not enough to pull the claims
15 within the patentable bounds of § 101. *Id.*; *see also Electric Power*, 830 F.3d at 1354 (“The
16 present case is different [than *Enfish*]: the focus of the claims is not on such an improvement in
17 computers as tools, but on certain independently abstract ideas that use computers as tools.”).

18 The claims of the ‘982 patent are like those in *TLI* and *Electric Power*, not *Enfish*. The
19 claims do not describe any improvement in the operation of a computer or other hardware
20 components like the claimed laser, control system, measuring circuit, and signal processor. Dkt.
21 No. 1-1 at 10:60-11:18, 12:19-43. Instead, the claims use these components in a conventional
22 manner to implement the abstract idea of accumulating data samples and generating a test result.
23 *Id.* at 10:60-11:18, 12:19-43. Again, the ‘982 patent admits that these same components were
24 used in conventional laser-induced testing systems. *Id.* at 3:36-48; Ex. 2 at 3:5-23, Fig. 1. Rather
25 than proposing modifications or improvements to the components, the claims simply use them in a
26 conventional manner to collect and process data. *Id.* at 10:60-11:18, 12:19-43. This is not enough
27
28

1 to render the claims non-abstract. *TLI*, 823 F.3d at 612; *Electric Power*, 830 F.3d at 1354.⁴

2 **3. The Specification and Prosecution History Confirm that the Asserted**
 3 **Claims Are Directed to an Abstract Idea, Not an Improvement in**
 4 **Hardware or Computer Functionality**

5 The specification and prosecution history of the ‘982 patent confirm that the only feature
 6 the inventors relied on to distinguish the prior art was the abstract idea of accumulating data and
 7 using it to generate a test result. The specification includes a “Summary of the Invention” section
 8 that emphasizes the steps of “determining plurality of samples of a response signal output by the
 9 electronic circuit,” “accumulating the plurality of samples to generate a value,” and “generating a
 10 test result based on the value.” Dkt. No. 1-1 at 2:1-10. It does not describe any specific
 11 improvement to hardware, and in fact distinguishes prior art solutions that relied on hardware
 12 combinations such as the addition of a lock-in amplifier. *Id.* at 1:38-67. Accordingly, the
 13 specification confirms that the claims are directed to an abstract idea. *See TLI*, 823 F.3d at 611
 14 (“[T]he specification’s emphasis that the present invention ‘relates to a method for recording,
 15 communicating and administering [a] digital image’ underscores that claim 17 is directed to an
 16 abstract concept.”) (formatting in original).

17 The prosecution history supports the same conclusion. As discussed in Section II.C above,
 18 the patent examiner initially rejected the claims based on the Horn reference. Ex. 1 at 60-68. In
 19 response, the only limitation the inventors relied on to distinguish their claims from Horn was the
 20 concept of “determining a plurality of samples” and “accumulating the plurality of samples to
 21 generate a value.” *Id.* at 88. The inventors did not identify any improvements to computer or
 22 hardware components. *Id.* They simply argued that the claims required a plurality of data
 23 samples, whereas Horn disclosed a single sample. *Id.* This record confirms that the focus and
 24 overall character of the claims is directed to the abstract idea of accumulating data and using it to

25 ⁴ For the same reason, the claims of the ‘982 patent are distinct from those at issue in
 26 *Diamond v. Diehr*, 450 U.S. 175 (1981). The invention in *Diehr* used a mathematical formula
 27 called the Arrhenius equation to calculate the optimal time to open a molding press that was used
 28 to cure synthetic rubber. *Id.* at 177-78. The mathematical formula was used to improve the
 operation of a machine by allowing it to cure rubber for the correct amount of time; the machine
 was not being used simply to implement a mathematical formula. *Id.*

1 generate a test result, not an improvement in the operation of a computer or other hardware. *TLI*,
 2 823 F.3d at 611-12.

3 **B. Alice Step 2: The Asserted Claims of the ‘982 Patent Do Not Contain Any**
 4 **Inventive Concept Beyond the Abstract Idea of Accumulating Data and Using**
 5 **It to Generate a Test Result**

6 The second step of the *Alice* framework is to “search for an inventive concept—*i.e.*, an
 7 element or combination of elements that is sufficient to ensure that the patent in practice amounts
 8 to significantly more than a patent upon the ineligible concept itself.” *Alice*, 573 U.S. at 217-18
 9 (internal formatting omitted). The elements of the ‘982 patent claims, taken alone or together, do
 10 not provide an inventive concept that brings the overall invention within the scope of § 101.

11 **1. Limiting the Claims to a Technological Environment Does Not Add an**
 12 **Inventive Concept**

13 The fact that the claims are directed to the field of electronic circuit testing does not add an
 14 inventive concept. *See Electric Power*, 830 F.3d at 1354. In *Electric Power*, the Federal Circuit
 15 determined in *Alice* step one that the claims were directed to the abstract idea of gathering,
 16 analyzing, and displaying information. *Id.* at 1353-54. Turning to *Alice* step 2, the court
 17 explained that limiting the abstract idea to the technological field of analyzing power grids did not
 18 add an inventive concept. *Id.* at 1354 (“Most obviously, limiting the claims to the particular
 19 technological environment of power-grid monitoring is, without more, insufficient to transform
 20 them into patent-eligible applications of the abstract idea at their core.”); *see also Alice*, 573 U.S.
 21 at 222 (“[T]he prohibition against patenting abstract ideas cannot be circumvented by attempting
 22 to limit the use of the idea to a particular technological environment.”) (quoting *Bilski v. Kappos*,
 23 561 U.S. 593, 610-11 (2010)) (internal formatting omitted). Applying this principle to the instant
 24 case, the claims of the ‘982 patent do not add an inventive concept by limiting the abstract idea of
 25 accumulating and processing data to the field of testing electronic circuits. *Id.*

26 **2. Accumulating and Processing a Plurality of Data Samples Does Not**
 27 **Add an Inventive Concept**

28 The fact that the claims specify a “plurality of samples”—as opposed to a single sample—
 does not provide an inventive concept. As an initial matter, this feature of the claims is part of the

1 overall abstract idea of accumulating and processing data. Thus, it cannot provide an inventive
 2 concept under *Alice* step two, which considers the remaining elements of the claims beyond the
 3 abstract idea itself. *See Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363
 4 (Fed. Cir. 2015) (“[A]t a second step we ask whether the remaining elements, either in isolation or
 5 combination with the non-patent-ineligible elements, are sufficient to transform the nature of the
 6 claim into a patent-eligible application.”) (internal quotations omitted).

7 Furthermore, even if the idea of accumulating and processing a plurality of data samples is
 8 considered at *Alice* step two, it does not constitute an inventive concept under the Federal Circuit’s
 9 reasoning in *Electric Power*. There, the claims described collecting and analyzing information
 10 from multiple sources, including sources located within and external to the power grid. *Electric*
 11 *Power*, 830 F.3d at 1354 (“[A] large portion of the lengthy claims is devoted to enumerating types
 12 of information and information sources available within the power-grid environment.”); *see also*
 13 *id.* at 1351-52 (listing sources of information). The Federal Circuit held that simply using more or
 14 better information did not add an inventive concept that would render the claims any less abstract.
 15 *Id.* at 1354 (“But merely selecting information, by content or source, for collection, analysis, and
 16 display does nothing significant to differentiate a process from ordinary mental processes, whose
 17 implicit exclusion from § 101 undergirds the information-based category of abstract ideas.”).

18 The same rationale applies to the claims of the ‘982 patent. The idea of accumulating and
 19 processing a plurality of data samples does not add an inventive concept because it is no less
 20 abstract than the idea of accumulating and processing a single sample. Both ideas fall within the
 21 “information-based category of abstract ideas” that are excluded from § 101. *Id.*

22 **3. Conventional Computer and Hardware Components Do Not Add an** 23 **Inventive Concept**

24 The fact that certain claims of the ‘982 patent recite computer and hardware components
 25 like a laser beam source, control system, measuring circuit, and signal processor is not enough to
 26 provide an inventive concept under *Alice* step two. *See TLI*, 823 F.3d at 613. As discussed in
 27 Section IV.A.2 above, all of these components were known in the prior art and used in
 28 conventional laser-induced testing techniques. The ‘982 patent explains that conventional

1 techniques used a scanning microscope with a built-in laser beam source and control system, along
 2 with a lock-in amplifier to act as a signal processor. Dkt. No. 1-1 at 1:12-15, 1:38-67. The patent
 3 also identifies a prior-art laser-induced testing system in U.S. Patent No. 6,897,664, which
 4 includes a pulsed laser beam source, a moveable control system, a measuring circuit, and a signal
 5 processor. *Id.* at 3:36-48; Ex. 2 at 3:5-23, 4:10-23, Fig. 1.⁵

6 Not surprisingly, the ‘982 patent does not identify any of these computer and hardware
 7 components as new or novel aspects of the alleged invention. Nor does it state that the
 8 components are used in a non-conventional manner. As discussed in Section IV.A.2 above, the
 9 ‘982 patent uses these components only as a conduit for the abstract idea of the accumulating and
 10 processing data samples. That is not enough to provide an inventive concept under *Alice* step two.
 11 *TLI*, 823 F.3d at 613 (“We agree with the district court that the claims’ recitation of a ‘telephone
 12 unit,’ a ‘server,’ an ‘image analysis unit,’ and a ‘control unit’ fail to add an inventive concept
 13 sufficient to bring the abstract idea into the realm of patentability.”); *Electric Power*, 830 F.3d at
 14 1355 (“Nothing in the claims, understood in light of the specification, requires anything other than
 15 off-the-shelf, conventional computer, network, and display technology for gathering, sending, and
 16 presenting the desired information.”).

17 **V. CONCLUSION**

18 The asserted claims of the ‘982 patent are directed to the abstract idea of accumulating a
 19 plurality of data samples and processing them to generate a test result. The remaining elements of
 20 the claims do not add an inventive concept that transform the abstract idea into a patent-eligible
 21 application. Thus, the claims fall outside the scope of § 101 and are invalid. Hamamatsu,
 22 therefore, respectfully requests that the Court grant its motion to dismiss for failure to state a claim
 23 on which relief can be granted and dismiss SEMICAPS’s complaint with prejudice.

24 ⁵ The prosecution history of the ‘982 patent confirms that a laser beam source, control
 25 system, measurement circuit, and signal processor were well-known components of conventional
 26 laser-induced testing systems. The patent examiner identified each of these elements in the Horn
 27 reference that he relied upon to reject the claims in the initial Office Action. Ex. 1 at 60-68. In
 28 response, the inventors did not dispute that these elements were disclosed in the Horn reference or
 otherwise known in the prior art. *Id.* at 87-91. The inventors distinguished Horn *only* because it
 did not teach accumulating and processing a plurality of data samples. *Id.* at 88.

1 DATED: May 23, 2019

Respectfully submitted,

2 QUINN EMANUEL URQUHART &
3 SULLIVAN, LLP

4 By /s/ David Eiseman

CERTIFICATE OF SERVICE

I, Joseph Leroy, certify that pursuant to Local Rule 5-5, counsel of record who have consented to electronic service are being served on May 23, 2019 with copies of the attached document(s) via the Court's CM/ECF system, which will send notification of such filing to counsel of record.

DATED: May 23, 2019

Respectfully submitted,

QUINN EMANUEL URQUHART &
SULLIVAN, LLP

By /s/ Joseph Leroy